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James Eldon

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HARRINGTON & SMITH, PC
4 RESEARCH DRIVE
SHELTON, CT 06484-6212

EXAMINER

RAINEY, ROBERT R

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,085	Applicant(s) ELDON ET AL.	
	Examiner ROBERT R. RAINEY	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-11 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-11 and 14-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/31/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

1. **Claim 8** objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 7 as depended from claim 1 as amended includes all the limitations of claim 8.
2. **Claim 9** objected to because of the following informalities: The recitation of "the *first* set of indicia are alphabetic indicia" on page 2 should refer to "the *second* set of indicia". Appropriate correction is required.
3. **Claim 19** objected to because of the following informalities: The recitation of the non-standard term "transreflective" in place of the term "transflective", which is the term used in the specification at page 10 as filed, seems to be an error. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 recites the limitation "the display controller" in the last two lines of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claims 1, 19 and 20 recite the limitation "the display device". There is insufficient antecedent basis for this limitation in the claim. Note: claim 1 as amended recites "a flexible display" rather than "a display device".

Claim 3 recites the limitation "the flexible film" in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1, 3, 5-10, 15, 16, and 20 rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent Application Publication No. 2002/0034930 to *Yamazaki et al.* ("*Yamazaki*").

As to **claim 1**, *Yamazaki* discloses:

A keypad comprising:

a set of switches (see for example Fig. 3 items 608 and 609 and [0073]-

[0074]);

a set of mechanical key elements arranged in a plane wherein each mechanical key element has a fixed position in the plane relative to the fixed positions of each other mechanical key element wherein each mechanical key element is capable of being moved by a user so as to operate a respective switch and wherein each mechanical key element comprises a separate outer pad for actuation by a user (see for example Fig. 3 items 603 and [0072]); and

a flexible display extending beneath the set of mechanical key elements and over the set of switches arranged to flex when a user moves any one of the set of mechanical key elements to operate a respective switch (see for example Fig. 3 items 604-606) and arranged so as to have a first display output in which a first set of indicia are displayed in association with the set of mechanical key elements and a second display output in which a second set of indicia, different to the first set of indicia, are displayed in association with the set of mechanical key elements, wherein the mode of the display device can be varied under the control of the display controller (see for example Abstract, especially "switching input modes", and [0062] or [0086] or [0094] for change in the image displayed on the keys, in which a change in the image displayed indicates that there are first and second sets of indicia and first and second modes, and [0064] for the display controller comprising the "CPU").

As to **claim 3**, in addition to the rejection of claim 1, *Yamazaki* further discloses that the key elements are rigid elements interconnected by the flexible

film (see for example Fig. 3 noting that item 603 is shown undeformed between 3A and 3B).

As to **claim 5**, in addition to the rejection of claim 1, *Yamazaki* further discloses that each outer pad is transparent (see for example [0072]).

As to **claim 6**, in addition to the rejection of claim 1, *Yamazaki* further discloses that the display device is a light-emitting display device (see for example [0011]).

As to **claim 7**, in addition to the rejection of claim 1, *Yamazaki* further discloses an electronic device including a keypad as claimed in claim 1 and the said display controller (see for example Fig. 1 for the electronic device; the display controller was already covered in the rejection of claim 1).

As to **claim 8**, all limitations were covered in the rejection of claim 7 as depended from claim 1.

As to **claim 9**, in addition to the rejection of claim 8, *Yamazaki* further discloses that the first mode is a numeric input mode and the first set of indicia are numeric indicia, and the second mode is an alphabetic input mode and the *second* (examiner assumes that the term “first” was used here in error) set of

indicia are alphabetic indicia (see for example [0105] in which the first set of indicia corresponds to the first memory and the second set of indicia corresponds to the third memory).

As to **claim 10**, in addition to the rejection of claim 9, *Yamazaki* further discloses that the first and second modes the indicia displayed from each key element is indicative of the character that would be input on pressing the key element (see for example Abstract, especially "With the present invention, display devices are formed in operation keys for inputting information to electronic devices such as portable information terminals, typically portable telephone devices, and information terminals, typically personal computer or stationary telephone devices. A user is able to recognize the operation keys by characters, symbols, and numerals displayed in the operation keys by the display devices." or [0010] or [0286]).

As to **claim 15**, in addition to the rejection of claim 8, *Yamazaki* further discloses that the key elements are arranged to protrude through individual holes in a housing of the electronic device (see for example Fig. 1 and Fig. 3).

As to **claim 16**, *Yamazaki* discloses:

A keypad comprising:

a display device comprising a first side and an opposite second side (see for example Fig. 3 items 604-606);

a plurality of mechanical key elements connected to the first side of the display device , wherein each of the plurality of mechanical key elements comprises an outer pad extending from the first side of the display device, and wherein the outer pad is configured to be operated by a user of the keypad (see for example Fig. 3 items 603 and [0072]); and

a plurality of switches opposite the second side of the of the display device, wherein each of the plurality of switches corresponds to one of the plurality of mechanical key elements (see for example Fig. 3 items 609 and [0073]-[0074]);

wherein a display pattern of the display device can be varied under the control of a display controller, and arranged so as to be capable of propagating two or more patterns of light from at least some of the key elements; whereby indicia may be displayed from the key elements and the displayed indicia varied under the control of the display controller (see for example Abstract, especially "switching input modes", and [0062] or [0086] or [0094] for change in the image displayed on the keys, in which a change in the image displayed indicates that there are first and second sets of indicia and first and second modes, and [0064] for the display controller comprising the "CPU").

As to **claim 20**, in addition to the rejection of claim 1, *Yamazaki* further discloses that the display device is a transmissive display device. (see for example [0231]).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0034930 to *Yamazaki et al.* ("*Yamazaki*") in view of U.S. Patent No. 6,219,731 to *Gutowitz* ("*Gutowitz*").

As to **claim 11**, in addition to the rejection of claim 11 over *Yamazaki*:

Yamazaki discloses the claimed invention except for in the second mode the character that would be input on pressing the key element is dependent on the number of times the key element has been pressed within a predetermined time period of each previous such press without the pressing of another of the key elements. It would have been obvious to one having ordinary skill in the art at the time the invention was made to *** since it was known in the art that ***.

Yamazaki does not expressly disclose that in the second mode the character that would be input on pressing the key element is dependent on the number of times the key element has been pressed within a predetermined time period of each previous such press without the pressing of another of the key elements.

Gutowitz discloses multi-tap character input or that the character that would be input on pressing the key element is dependent on the number of times the key element has been pressed within a predetermined time period of each previous such press without the pressing of another of the key elements (see for example Abstract).

Yamazaki and *Gutowitz* are analogous art because they are from the same field of endeavor, which is reduced key-set input devices.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use multi-tap input with the device of *Yamazaki*. The suggestion/motivation would have been to use a de facto standard, that is a method that users could be assumed to be familiar with, (see for example *Gutowitz* Abstract).

9. **Claims 14, 17 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0034930 to *Yamazaki et al.* ("*Yamazaki*") in view of U.S. Patent No. 6,704,004 to *Ostergard et al.* ("*Ostergard*").

As to **claim 17**, in addition to the rejection of claim 16 over *Yamazaki*, *Yamazaki* further discloses the use of nibs between the key elements and the switch wherein each of the plurality of nibs corresponds to one of the plurality of mechanical key elements (see for example Fig. 4).

Yamazaki does not expressly disclose nibs connected to the second side of the display device.

Ostergard discloses an arrangement for integration of key illumination into keymat of portable electronic devices and in particular: nibs connected to the second side of a display device (see for example Fig. 4 items 22 and 6:47-62).

Yamazaki and *Ostergard* are analogous art because they are from the same field of endeavor, which is illuminated indicia keypads.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to add nibs between the display and the switches as taught by *Ostergard* to the device of *Yamazaki*. The suggestion/motivation would have been to allow the user to selectively activate the switches (see for example *Ostergard* 6:54-55).

As to **claim 18**, in addition to the rejection of claim 17 over *Yamazaki* and *Ostergard*, *Yamazaki* further discloses a plurality of resilient members between the plurality of nibs and the plurality of switches (see for example Fig. 4 items 708) and *Ostergard* further discloses a plurality of resilient members between the

plurality of nibs and the plurality of switches (see for example Fig. 4 the portion of switch 110 pointed to by the arrow).

As to **claim 14**, in addition to the rejection of claim 1 over *Yamazaki*, *Yamazaki* further discloses the use of nibs between the key elements and the switch wherein each switch is positioned directly underneath a nib of its respective key element (see for example Fig. 4).

Yamazaki does not expressly disclose nibs connected to the second side of the display device.

Ostergard discloses an arrangement for integration of key illumination into keymat of portable electronic devices and in particular: nibs connected to the second side of a display device (see for example Fig. 4 items 22 and 6:47-62).

Yamazaki and *Ostergard* are analogous art because they are from the same field of endeavor, which is illuminated indicia keypads.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to add nibs between the display and the switches as taught by *Ostergard* to the device of *Yamazaki*. The suggestion/motivation would have been to allow the user to selectively activate the switches (see for example *Ostergard* 6:54-55).

10. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0034930 to *Yamazaki et al.* ("*Yamazaki*").

As to **claim 19**, in addition to the rejection of claim 1 over *Yamazaki*:

Yamazaki discloses the claimed invention except for the display device being a transreflective display device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute a transreflective display device for the EL or transmissive display devices taught by *Yamazaki* since it was known in the art that transreflective displays, more commonly known as transflective displays, were substitutable for EL or transmissive displays and applicant has not taught that the particular display type solved a particular problem (as evidence that transflective displays and their strengths and weaknesses, i.e. interchangeability, with respect to transmissive and electroluminescent displays, was well known see for example U.S. patent No. 6,124,971 to Ouderkirk et al. 1:41-60 and surrounding paragraphs).

Response to Arguments

1. Applicant's arguments with respect to claims 1,3,5-11,14-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT R. RAINEY whose telephone number is (571)270-3313. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RR/

/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629